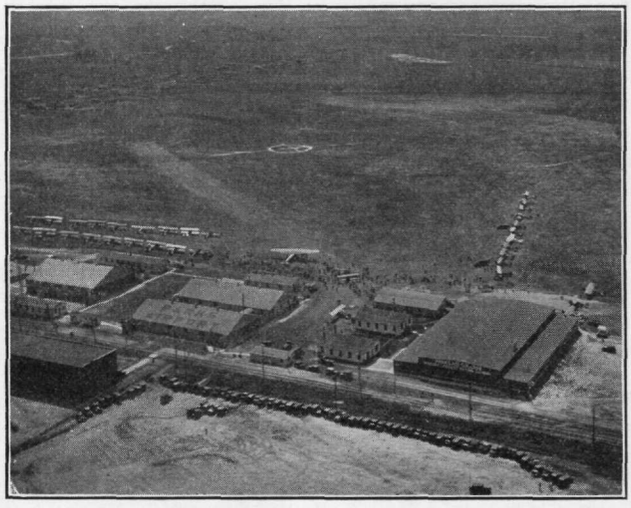
SPREADING WINGS

By J. E. Batterson, M.E., 2

It was a cold, miserable and depressing day when we landed in St. Louis early one January morning to take up flying. Dirty snow, smoke, and fog, of a nature that only those who have experienced it can appreciate, prevailed everywhere, giving the city a dim, hazy and unreal appearance—not exactly an ideal welcome for young men who have but recently left their warm, comfortable homes. However, with all the unconcern of experienced travelers we boldly inquired our way of passers-by to our new alma mater—the aviation school. In those days, people were not as air-minded as they are today, so it took considerable time to find a person who had heard of the institution of learning that we desired to attend. We finally were informed that it was located on Lambert Field about twelve miles from the city, and given the necessary directions, which we immediately proceeded to follow. We first boarded a street car and rode for a while, then transferred to a bus which took us to the city limits. There we waited hours, it seemed, for the airport street car which, when it arrived, resembled to a startling degree the "Toonerville Trolley." After a long journey of bumps and sways, up hills and down into valleys, our conductor informed us that we had reached our destination, and that we should "follow that there road for a little piece" and we would hit the airport. The "road" was little more than a cow-path, and being covered with six inches of snow, navigation with two heavy suitcases was no easy task. That "little piece" referred to by the venerable conductor turned out to be a good two miles (bless his heart!). The crowning blow came when we had explored the whole airport and found no trace of the school we were hunting. The reader should have little difficulty in imagining our emotions when, with feet thoroughly soaked by that cross-country trek in low-cut shoes through deep snow, we were told that the place we sought was on the other side of the city, twenty-one miles away! However, the wife of an air-mail pilot who had brought her husband to the field for his daily run, overheard our sad plight and kindly offered to take us over. Naturally, we gratefully accepted, and soon we were deposited on the "campus" of our goal.

The first thing we did was make for the school restaurant and fill the emptiness caused by the morning's activity. The quality of the food was excellent—a most pleasant surprise. Indeed, many of the airports that we had visited the few weeks preceding offered no restaurants at all, and those that did—well, the less said about them, the better. After a hearty meal, we were guided about the airport on a tour of inspection. From the booklets received, we had formed a good opinion of the place, but it far exceeded our expectations. All the air schools we had previously visited usually consisted of one hangar and three or four small airplanes, but here was a place with its own restaurant, dormitories, classrooms, shops, and more than twenty airplanes of all types, in fact a small college by itself. Having satisfied ourselves, we entered the school office and were greeted by a pleasant young fellow whom everyone called "Joe." Joe was the registrar, and we later found out he was Lindbergh's old roommate, before Lindy made his famous flight. We also learned that Joe was once a little too boastful of his prowess as a parachute jumper and Lindbergh called his bluff by having a friend take them up so that Joe could demonstrate his ability. When the crucial moment came to jump, Joe backed out, whereupon Lindbergh picked him up and threw him out of the plane, which was 2000 feet up in the air (at least so the story goes). To get back to the story, we enrolled, paid our tuition, and were given books, helmet, goggles, and a pair of white coveralls. Having taken the required medical examination before leaving home, we were ready to start flying immediately. In the hallway outside was the flight board



Here Was . . . a Small College by Itself

where each "freshman" flyer was scheduled to fly at a certain time under a certain instructor. Having been assigned to fly the following afternoon, we were taken to the dormitory and spent the rest of the day in strolling about getting acquainted.

Students who flew in the afternoon attended ground school during the morning, and those flying in the morning attended ground school in the afternoon. Due to the irregular date of our arrival, it was some time before we were permitted to enter ground school, but the flight school, being independent, could be started any day. So we rose the next morning bright and early, had a hasty breakfast, and then hurried out to the flying line in order not to miss any details of school life. The sight that greeted us was a beautiful one. Twenty-five planes of all sizes, shapes, and colors were lined up on either side of the runway, with propellers spinning slowly. The early

morning sun glistening on the freshly fallen snow and reflected from the shining spotless planes made a delightful picture. Some of the students and instructors clad in flying suits and heavy gloves were jogging around for a bit of exercise, others were gathered in groups, enjoying a last-minute cigarette before taking off. Soon the engines were warmed sufficiently; the students clambered into the cockpits and opened the throttles wide in order to make sure the engines were functioning properly at high speed. The wheels of the planes were blocked, so that they could not move forward, but at such high engine speeds the ships fairly quivered, as if eager to leap into the air. The din was terrific and conversation with one's neighbor was impossible. However, it soon quieted, and last-minute checks were made of the planes, controls were inspected to insure perfect working condition, wheel blocks were removed, and the first plane taxied away for the take-off.

We spent our first morning out on the flying line, not missing a thing that went on, and endeavoring to pass the time more quickly until our turn to fly came around. Eventually the time arrived and we climbed in the plane after receiving a brief lecture covering the elementary parts of piloting, and the signals used while in the air, since conversation was out of the question. The instructor then seated himself in the front cockpit, taxied out to the edge of the field and took off. After climbing and circling for several minutes, we reached an altitude of 2500 feet, and suddenly we received the signal to take the controls. Few people can appreciate the sensations of those first few minutes flying an airplane. Keeping an airplane level is far different from steering an automobile, because there are three dimensions to keep straight at all times. No sooner did we have the nose level, than one wing would be lower than the other, and as soon as that was corrected, we would be headed in the wrong direction. Our path of flight those first few minutes resembled the path of a drunken sailor, only in three dimensions. Our sympathies are now certainly extended to the flight instructors, who suffer untold agonies while their students carve undiscovered geometrical figures and curves in the air. However, we soon got the hang of keeping the plane in an approximately straight and level path, whereupon the instructor proceeded to have us make a few turns, and our troubles began anew. As you readers of this article probably know, an airplane must be banked when making a turn, in order to prevent skidding, and also must be turned with the rudder at the same time. The exact amount to bank and the amount to be turned is a varying quantity depending upon how sharp a turn is made, and is obtained only through long practice. As you have already guessed, we did not hit upon that happy medium during our first flight. The instructor had a merry time sliding around in the front cockpit, hanging on for dear life with one hand and signaling frantically with the other. Soon tiring of this, he signaled for us to release the controls, which we did rather willingly, and thus ended our first lesson, leaving us seriously in doubt as to our prospects of becoming a finished pilot. Needless to say, we received a well-deserved lecture on the finer points of turning from the instructor after landing.

The first twenty lessons were of about a half hour's duration each, as thirty minutes of such work, with so much to learn, is at first very fatiguing.

Turning and banking was soon mastered, and the next step was to learn to take off and to land. Taking off was an easy task—the ships would practically do so by themselves if only headed in one general direction for a reasonable length of time. However, landing was about the hardest thing for the embryo pilot to do successfully. The older pilots used to say that if you could walk away from the plane after landing, it was a good landing. Not so in the modern school of aeronautics; the student had to make every landing so smooth and gentle that a sleeping baby would not be disturbed (if babies could sleep under such a racket). Yours truly had his share of difficulties in mastering the art of bringing a ship down to the

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ground right side up and in one piece. First, upon approaching the field from the air, you had to judge the spot where to throttle the engine in order to glide down and land somewhere within the square mile of space available. If you think that this is easy, you are badly mistaken. The usual mistake was to cut the motor in such a place that if the glide were carried out, the plane would either land a mile or so short of the field or a mile or more beyond. Upon such occasions, it certainly was convenient to have an instructor along to help you out of the difficulty. After the plane was within about five feet of the ground, the student was supposed to "level off," as it is called, in preparation for landing. The first few times at coming down rather rapidly from high altitudes, it is pretty hard to decide just what five feet looks like; consequently it was excellent entertainment for bystanders and fellow students to see student pilots come in, level off at forty feet from the ground, and try to land up there. Naturally, when flying speed was lost, what went up had to come down, and down it came! More than

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once, after such "pancaking," we felt as if we would have to climb to reach ground level. Boy, it certainly gave one's back teeth a jolt! Other times students would fail to level off at all and glide right into the ground, whereupon the plane would start hopping and bouncing crazily around the field. This maneuver was more spectacular from the spectators' viewpoint, but was less hard on the student and instructor physically than "pancaking." On top of this, with so many planes in the air and landing at the same time, one had to keep a sharp lookout for other ships. Occasionally some student who had enough training to fly alone would attempt to land on top of another plane sitting on the ground. We leave the rest to your imagination. Strange to say, with all the planes flying around, there were few accidents, and those not serious, due likely to a most excellent corps of trained instructors and an efficient system of training.

The time from about the third hour spent in training up to the tenth was devoted solely to taking off and landing. By the tenth hour, the average student was able to get the plane into the air, circle the field, and land safely without the aid of the instructor. But before being permitted to solo, or fly alone, each student was given a thorough drill in stalls and tailspins. You readers probably know already that an airplane will stall in the air if climbed too steeply, just as an automobile will stall climbing too steep a hill. However, you can't put on the brakes up there and rest to think the situation over. No sir, you have to keep your wits and the plane right side up or you may find yourself in a tailspin! Tailspins are not at all dangerous as long as you are high enough to recover from them; they become dangerous when performed too close to the ground. Sometimes the new student is apt to unconsciously stall his plane due to paying too much attention to other things besides keeping the plane level, hence the drill in stalls and spins. We enjoyed doing tailspins more than any other acrobatic maneuver, for there is more physical sensation involved; we later used to go up alone and do them by the hour for the sheer fun of it.

It soon came time for our first solo, which is the immediate goal of all student pilots. Sure enough, one bright sunny morning our instructor gave us a surprise by climbing out and tying a long white rag to the tail, signifying that the plane contained a solo student. (Some of the instructors liked to put gray hairs in the field manager's head by tying a rag to the tail of a plane then going up and doing stunts over his office.) Well, after a few parting admonitions from the instructor, we gritted our teeth and shoved the throttle full ahead. Gathering speed, we soon took off because of the lightened weight. Once in the air, only the initiated could have appreciated our emotions. "Boy, here you are, several hundred feet above Mother Earth, and the result depends entirely upon you, so go to it." A little later we discovered that there was nothing to it, and the plane was far more easy to control without the instructor. Our chief concern was to keep away from other planes, which we certainly did. Circling around until an opening presented itself, we cut the engine and glided down for a landing feeling as big as you please. From then on, most of the flight training was done alone. However, as we progressed in the more advanced phases of flying, an instructor would accompany us for a "check" flight, to correct any faults we had developed since the last "check." When flying alone, we were required each day to practice a certain set of maneuvers, so that by the time we had spent fifty hours in the air, and were ready to take the examination for a commercial pilot's license, we were pretty thoroughly drilled in the fundamentals of flying and precautions to be observed.

In the meantime, while doing advanced flying, we spent half of each day in ground school, where we were taught the theory of flight, aerodynamics, rigging, the use of parachutes, the inspection and repair of planes and motors, air law, and many other topics that were essential to the education of a pilot.

After four months of intense study and flying, we were "graduated" from the school and pronounced ready for the commercial pilot's examination. This was the crucial test and we awaited the day with trepidation. The

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examination consisted of two parts, the first being a four-hour quiz on the subjects covered in ground school and points concerning the operation of airplanes. For the second part, the Department of Commerce Inspector giving the examination accompanied us on a flight during which we were required to "do our stuff" aeronautically speaking, which meant performing all the things we had learned in school. This test lasted for two hours, and believe us, we were tired by the time the inspector climbed out of the plane. However, we were certainly proud to receive the slip of paper from the inspector that told the world that the bearer had successfully passed all requirements and was now a full-fledged airplane pilot. That occasion will not be forgotten for a long time.